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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/053,582 | 01/24/2002 | Kazuki Hosoya | 018842.1195 | 3494 |

24735 7590 05/18/2004

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EXAMINER

DUONG, THO V

ART UNIT PAPER NUMBER

3743

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,582

Applicant(s)

HOSOYA ET AL.

Examiner

Tho v Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 13-36 is/are pending in the application.
- 4a) Of the above claim(s) 13-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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DETAILED ACTION

Claims 1-10 and 13-36 are now pending. Claims 13-36 have been withdrawn from further consideration. Claims 1-10 still remain rejected.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed subject matter of “wherein said first aluminum member is fixed to said second aluminum member via said first portion of said resin...is separated from said second aluminum member by said first portion of said resin and said second portion of said resin” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 5- 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Johann Huber (US 3,590,917). Johann discloses (figures 2,8 and column 6, line 10 – column 8, line 54).

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Johann discloses a stack of heat exchanger comprising a first aluminum member (108) coated with a first portion of a resin TP3 (portion adjacent to the first member); and a second aluminum member (109) coated with a second portion of the resin TP3 (portion adjacent to the second member), wherein the first aluminum member is fixed to the second aluminum via the first portion and the second portion of the resin TP3, and wherein the first aluminum (108) is separated from the second member (109) by the first portion and the second of the resin. Johann further discloses that the resin TP3 is a thermoplastic resin or a thermosetting resin. Regarding claim 7, the resin material of Johann is similar to the claimed resin. Therefore, it inherently provides lubricity as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johann in view of Beasley (US 4,428,418). Johann substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the adhesive resin is polyesters or nylons. Beasley et al. discloses (figure 1 and column 6, lines 45-63) a suitable adhesive resin such as polyesters or nylons is used in bonding two aluminum heat exchanger members (16 or

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54) for the purpose of forming integrity of the heat exchanger core without further using the expensive bonding method such as soldering or brazing.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda (US 5,800,673) in view of Johann Huber (US 3,590,917). Okuda discloses (figures 5-7) a stacked – type heat exchanger comprising a plurality of aluminum heat transfer tubes (1) formed by pairs of tube plates (6) and fins (2) being stacked alternatively with the tubes; each pair of tube plates (6) having flange portions (6a) connected together; a first tube plate of the pair is coated with a first portion of a resin (S); and a second tube plate of the pair is coated with a second portion of the resin (S). Okuda does not disclose that the first aluminum member and the second aluminum member are fixed as well as separated via the first and second portion of the resin. Furthermore, Okuda discloses that soldering method has been used to bond the two aluminum members together. Johann discloses (figures 2,8, column 1, lines 20-42 and column 6, line 10 – column 8, line 54) discloses a stack of heat exchanger comprising a first aluminum member (108) coated with a first portion of a thermosetting or thermoplastic resin (portion adjacent to the first member); and a second aluminum member (109) coated with a second portion of thermosetting or thermoplastic resin (portion adjacent to the second member), wherein the first aluminum member is fixed to the second aluminum via the first portion and the second portion of the resin, and wherein the first aluminum (108) is separated from the second member (109) by the first portion and the second of the resin for the purpose of lowering the cost of the heat exchanger and decreasing the defect rate of the heat exchanger plate joints by the use of the adhesive resin. Regarding claim 7, the resin material of Johann is similar to the claimed resin. Therefore, it inherently provides lubricity as claimed. It would have been obvious to one having ordinary

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skill in the art at the time the invention was made to use Johann's teaching in Okuda's heat exchanger for the purpose of lowering the cost of the heat exchanger and decreasing the defect rate of the heat exchanger plate joints.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johann Huber in view of Akiyama. Johann Huber substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the adhesive is a vinylidene fluoride resin. Akiyama discloses (column 1, lines 54-63) that vinylidene fluoride resin has been used as a pressure adhesive for the purpose of obtaining an adhesive that has good balance of tack adhesive strength, and cohesive force as well as excellent weatherability, water resistance and oil resistance. Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use in the application of a particular heat exchanger. In re Leshin, 125 USPQ 416. In this case, if the Johann's heat exchanger is intended to use with oil or water or in an extreme weather, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Akiyama's teaching in Johann Huber's heat exchanger for the purposing of obtaining an adhesive that has good balance of tack adhesive strength, and cohesive force as well as excellent weatherability, water resistance and oil resistance.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Kanda et al. (JP 357184892A) discloses a sensible heat exchanger that has thermoplastic resin coating on the heat exchanger.

Nishishita et al. (US 5,203,402) discloses a heat exchanger having a resin coating forming on the heat exchanger.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

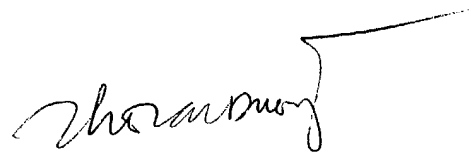
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



TD

May 10, 2004



Tho Duong

Patent Examiner. .